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ELEMENTARY PSYCHOLOGY

An Outline of a Course by the Project Method

by

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To the Teacher of Psychology:

The present plan is the outcome of a series of experiments in the teaching of psychology in the University of Iowa. It is an attempt to embody a series of vantage grounds gained from time to time of which the following are outstanding: (1) the elementary experiment without apparatus; (2) the "class experiment" as a substitute for information lectures; (3) the sectioning on the basis of ability which led to the individual plan herein contained; (4) the extensive use of the reference library; (5) the enlarging of the scope and content of the course; and (6) the reducing of the overhead work in the organization of instructional material.

As the problem of how to teach the elementary course is a live issue of the day, I am taking the liberty of sending a sample copy to each of the principal psychologists of the country with the request that it be examined with reference to availability for class use and that criticisms and constructive suggestions be sent to the author by those who are interested in the problems of teaching the elementary course.

While this plan may commend itself to large and strong departments, it should be of special interest to the smaller institutions in which staff and equipment are limited. If faithfully pursued, it will enable the smallest college to teach psychology as well as it is taught in a university.

Since the author feels that this sort of a message has a mission in the fraternity of psychologists, the permission is herewith given to reprint, adapt, or otherwise modify this course to meet the needs of the local institution. The publishers of this outline are prepared to supply copies for entire classes at approximate cost of printing in a large edition. It is proposed to publish an annual revision.

As a result of this experiment in Iowa, other departments, notably history, English, logic and ethics, are experimenting with the principles involved herein; and psychologists in other institutions may render a service by talking over this problem with colleagues.

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ELEMENTARY PSYCHOLOGY

The purpose of organizing this course is to apply the findings of modern psychology to the teaching of psychology. The plan chosen from the many possibilities open has four leading objectives: (1) to keep each student busy at his natural level of successful achievement; (2) to introduce the student to scientific method in psychology through experiment; (3) to place the student in an active scholarly attitude of self-help and freedom; and (4) to acquaint the student with the best psychologists through effective utilization of books.¹

I. Elements of the Plan

To embody these four objectives the present plan involves the following essential features:² (1) the elimination or reduction of the traditional lectures and quizzes; (2) substituting, therefore, two-hour periods of elementary experiments and supervised reading in a project room; (3) the assignment of the project work in large units; (4) making the assignment fit the spread of individual differences in capacity for achievement; (5) furnishing the project room with such books and other material as may be needed for the project of the month; (6) socialization of the group; and (7) a monthly test of ability to psychologize.

In the project method we maintain that what is said in the best books is better said than what is heard in the ordinary lecture; that the mature student should be encouraged to take an aggressive attitude toward learning instead of merely allowing himself to be pursued by it; that psychology represents a world of knowledge of which the elementary student should have a free and generous sampling; that what a student in this new field needs is not drill on a few hobbies of the instructor, but opportunity for broadening of the horizon through the opening of new vistas into the fascinating fields of modern psychology; that the student should acquire the habit of association with, affection for, and criticism of authors rather than of instructors; that the student's mind should not be on the problem of passing examinations, but rather a thrilling adventure into new fields of human interest; that he should pass from the secondary

¹ President Suzzalo has sounded the keynote: "Less teaching—more supervision of learners—is the modern tendency of the school. The professor of the future will be simply a good reference librarian, and the university will consist of a lot of books, an earnest student, and some one who knows them both and can bring them in thoughtful accord."

² The term 'project' is here used in a very free sense to indicate that the assignment is made in a large unit; that the responsibility is placed upon the student for working it out; that the general project is outlined; and that reasonable supervision of work is guaranteed in conformity with the giving of the fullest freedom for individual work.

Instructors will find a fuller account of the project method in the author's "Learning and Living in College," published by the Department of Publications, University of Iowa, Iowa City. Price \$1.00.

school methods of learning to the scholarly methods of the intelligent adult; that reading from different points of view on the same topic is a better way of clarifying the issue than the customary teacher's "help"; that, if lectures are to be given, they shall be exclusively for experimental demonstration and occasional orientation—never for the furnishing of the main body of facts; that if quizzes are to be maintained they should be in the nature of discussion or special help to sections based on ability, and not for the purpose of finding out what the student knows or does not know or for teaching the facts; that the class shall be socialized with the fullest freedom that comports with good work in a library or laboratory; and that the instructor in charge of the room shall not teach, but supervise reading and experimentation.

1. *Elimination of lectures and quizzes.* Psychologists have been among the first to expose the fallacies underlying the traditional lecture and quiz method for college students.

The ordinary *information* lecture is in favor with the instructor because it is the easiest way of getting by with his work; it enables him to pose as an authority; and when he has recited his lesson to the class, without sounding the response of the class he may adulate himself with the feeling "well done,"—"the teacher's illusion." This is topped with the awareness that students like it. Students like the information lecture because the absorption of this pre-digested food encourages a lazy and passive attitude. It rests on the assumption that what the instructor says by word of mouth is more valuable than what is said more deliberately by greater scholars in up-to-date books; it fosters the elementary school attitude that the student has a small and fixed lesson to learn.

Many psychologists are, however, now facing the responsibility of constructive application of their theories to their own tasks. There is no simple golden way. The present proposal represents the best judgment of one who has been experimenting in this field for many years and is but one of the many possible solutions.

2. *Registration.* The best way of handling a three-hour course throughout the year is to have the students register in three two-hour periods, as in laboratories. By providing three such periods, registration conflicts with other courses will be avoided. In a large institution there will, of course, be more periods. The most economic unit in a large institution is a room seating about 100 students at a time. Three years of experience show that the work accomplished in a two-hour period of supervised study of this kind gives better results than a one-hour class period with home assignments, even though the assumption is that the home assignment represents two hours of work at home. The advantage of working under supervision in a room where material is on reserve is, of course, very great and there is no reason why interested students should not do additional work at home or use the project room in extra periods if they so desire.

The project room is in charge of one competent instructor who has

all of his time free for individual consultation as he mingles with the students at work. He operates on the assumption that all the necessary instructions for procedure have been furnished in mimeographed or printed form to the class. If a student says, "I can't understand this," the instructor does not explain it, but points to the presence of various overlapping accounts of the same item in available books. This soon creates in the students an attitude of trusting themselves and a feeling that they must "use their brains" for whatever they are to get. It is a magnificent sight to find 100 students seated for a two-hour period with all conveniences for scholarly work and each one aggressive in his attempt to organize the material in a month's assignment without interruption or handicap.

Where there are faculty traditions and prejudices against two-hour periods for non-laboratory courses, the project plan may be carried on by having the customary single hour period in the project room and making provision for use of the books at home. But this should be a last resort.

A third alternative is to have one lecture period and two project periods a week where, in institutions which have good equipment for experimental demonstrations, class-experiments may be performed in the lecture and where there are in the department several specialists in different fields of psychology who may appear in turn before the class.¹

3. *Assignment.* The assignment is based on the assumption that the student shall undertake to clarify one natural unit of psychology in a convenient period, usually one month. After experimenting with various types of assignments, the one herein contained has finally been adopted as representing helpful guidance in effective focusing of reading and experimentation. The naming of ten sub-topics is intended to motivate and aid the student in collecting his material in terms of which the final examination will be given.

To each student the project assignment should mean this: *Spend at least two hours on each of the ten topics. When the topic assignment begins with an experiment or a chapter with exercises, perform the experiments or exercises rigorously and with utmost care and record the results before doing any further reading. In all reading follow Kornhauser's rules² for (1) rapid survey reading, and (2) rereading for final organization. Proceed as far as you have time for in the assignments. You are permitted to work at your own natural pace and to put into your final organization of the topic those facts which seem to you most worth while.*

While no formal notes are required, except for experiments and exercises, the student will find it convenient to take notes in a selective way but *never by copying sentences*. The ideal way to take notes is to jot down merely key words and then deliberate over

¹ This method is used in the University of Iowa at the present time because we have equipment for one experimental lecture a week throughout the year. There are twelve different psychologists who take turn in giving the lectures.

² See project I, topic I.

what they represent until you arrive at an understanding of the situation.

4. *Recognition of individual differences in the scope of assignment.* Psychology teaches that individual differences in capacity for achievement are very large, relatively fixed, and very far-reaching in determining what is a reasonable quality and quantity of work to expect from an individual, and maintains that praise and blame in the recognition of progress should be based upon actual ability. Of those who pass, or should pass, in an ordinary class in psychology there will be the one-talented, two-talented, three-talented, and five-talented students. Our theory is that each one should invest his talents. While one student may pass on the performance of one talent, other students should be expected to perform on the basis of two, three, four, five or more talents, as the case may be, and should regard this as a privilege.

For this reason the regular assignments are made so heavy that only about 5 to 10 per cent of the students may be expected to master the whole assignment completely and do a reasonable amount of supplementary reading, and that, in an examination of such scope as to cover all degrees of ability, the passing mark may be somewhere around 30 per cent while those who get the highest mark will stand in the nineties on the same examination.¹

5. *Equipment.* The outline of the present course is based upon the following textbooks, of which each student is expected to purchase one for each semester:

First Semester

Gates, *Elementary Psychology* (Edition 1928)

Seashore, *Introduction to Psychology*

Seashore, *Elementary Experiments in Psychology* (Referred to as the Manual)

Woodworth, *Psychology, A Study of Mental Life*

Second Semester

Allport, *Social Psychology*

Conklin, *Principles of Abnormal Psychology*

Skinner, Gast, and Skinner, *Readings in Educational Psychology*

Poffenberger, *Applied Psychology, Its Principles and Methods*

The following two books are recommended for very rapid outside reading as a preliminary orientation to each semester's work:

First semester

Ruckmick, *The Mental Life* (This contains an excellent classified bibliography)

Second semester

Griffith, *General Introduction to Psychology*, Revised Edition
Part II

¹ The method of sectioning on the basis of ability, now in vogue in the best institutions, is a great forward step in the direction of keeping each student busy at his own approximate level. But the present method goes one step further and attains the full goal of adjusting the work to the needs and capacities of the individual by leaving each individual free and unhampered to work at his own natural pace and to be carried in large part by his own personal interests, aptitudes, and enthusiasms.

The books which are to be supplied in the library are mentioned by full title in their appropriate places in the outline.

The ideal plan would be to have sets of duplicate copies of all books that are to be used available for each project as in the reference library. After considerable experimenting we find that a compromise may be arranged as follows. The course as outlined is based primarily upon eight books of which the student must have four in each semester. It is proposed that students be grouped in units of four and that each student buy one book each semester. Since all assignments are made for as long a period as one month, or more, each book-group can readily exchange books and take turns so that all four may have the use of the four books required in the project in addition to the supplementary books furnished in the project room. That makes a reasonable requirement for the students' investment in books, will relieve not only the cost but also the labor in operating the book service, and will enable students to take the books to their rooms at pleasure. All other books referred to in the outline should be supplied in ample sets in the project room.

In order to make this four-group unit operate most easily it is proposed that the whole class be not kept on the same project in the second semester, but that in each group the No. 1's start with project V, 2's with project VI, 3's with project VII, and 4's with project VIII and proceed in rotation.¹ This will allow each student to have possession of one of the group books for ample time and will reduce the pressure of demands upon the supplementary books to one-fourth. In the second semester there is no advantage in keeping all students on the same project; but in the first semester there is a definite reason for the assigned order of topics.²

With each project the supplementary books furnish attractive reading and each student will at least leaf through these books to become aware of their existence and the general nature of the content. Some students may, however, go extensively into reading of this kind, not only in the books mentioned herein but in other books that may be supplied or suggested. Much of such reading may be taken from leisure time and time for general reading.

As this course is now arranged, all the apparatus needed consists of material furnished in the pocket of the manual of *Elementary Experiments* and one set of six of the phonograph records entitled *Measures of Musical Talent*, which may be supplied for the room at the cost of about \$1.25 each. These records constitute the only equipment that it is necessary for the department to furnish, assuming that a phonograph is available.³ There is a real advantage

¹ The division into projects facilitates the dividing up of the course, as in summer sessions, into units which may be given simultaneously or in successive terms.

² It would be advantageous for each book-group to have two copies of the manual of *Elementary Experiments* during the first semester.

³ These records may be obtained from the Columbia Phonograph Company. The "Manual of Instructions and Interpretations" for the use of the phonograph records is obtainable from the Department of Publications, University of Iowa, for 25c.

in having such simple and inexpensive apparatus because it is more advantageous for the student to perform his first experiments with simple apparatus, which does not distract attention away from the psychological problems, rather than with complicated physical apparatus. Furthermore, this minimum equipment can be available at an insignificant expense for the course.¹

6. *Socialization.* It has been found desirable to allow the students the greatest freedom for movement in the project room with the privilege of consultation with the instructor and the freedom to get and return books from the reference shelves at will. In large classes it is, however, expedient to have assigned seats in alphabetical order with the women on one side of the room and the men on the other. As is directed in the manual of experiments, coöperation in the performance of certain experiments is recommended. The only requirement in the way of room equipment is that there shall be comfortable desks or tablet chairs on which to work.

7. *Monthly examinations.* Experience shows that in this type of assignment it is desirable to combine the essay type of examination with the objective type. The former is desirable because it gives the student an opportunity to treat a subject from his own point of view and with reference to the degree of mastery that he has attained; whereas the latter is desirable as an objective check of the amount of factual material gathered. The written reports, both of experiments and the other required "exercises" in the author's test, should conform to high standards of scientific report, should be collected with rigorous care, and should be given weight in determining monthly standing.²

II. Content of the Course

We are just beginning to emerge from a chaos in regard to the attitude toward the content of elementary courses in psychology. The present course is based on the following assumptions: (1) that where there is no experiment there can be no science; (2) that there is merit in the various points of view which prevail in different schools of psychology and, therefore, the elementary course should be eclectic; (3) that applied psychology is now on such sound basis that one-half of the course may well be devoted to this; and (4) the aim of the elementary course is to train the student in the art of psychologizing and in the power to realize something of the richness of material available for more intensive work, both in pure and applied psychology.

The first four projects are devoted to pure psychology; the last four to applied. Where institutions are so unfortunate as to offer the course for only one semester the first four projects will answer

¹ The choice of books is based upon the present experience in Iowa. The author's books are, of course, given preference because they were written for that particular course. The plan may, however, be adapted to other local conditions.

² Objective examinations for the entire course of the type described on page 82 of the author's "Learning and Living in College" are available. Sample sheets of these examinations will be furnished confidentially on request from teachers who have adopted this project method.

that purpose. There is a double justification in the introduction of the applied psychology at this stage; namely, not only that the applied science may to advantage be included in the elementary course, but also that each unit of these applications is so arranged that it furnishes a most excellent review of the pure psychology from the point of view of each of the four applications.

1. *Experiment.* With this program in view the first two projects are made largely experimental and for this purpose experiments are chosen which may be performed with the material available in the "Manual" and such other material as can readily be made available in any institution without requiring expensive instruments or separate rooms for experimentation.

The first two projects should be largely disciplinary, developing a technique for observation and the recording of facts. That feature is favored by making each experiment sufficiently intensive to furnish real insight into a problem. Each experiment deals with one comparatively small item, but treats this with fair thoroughness.

In accordance with this principle of intensive work a consecutive series of auditory experiments have been selected because these furnish a profile of capacities, so that at the end of these series the student will have a considerable part of a picture of himself in terms of scientific measurements in one particular respect, namely, musical talent.

This experience with experiments prepares the students for project III and project IV, in turn. Project III introduces the physiological approach. Some may be inclined to put this project first. Others may be inclined to put project IV first. These are matters in which the instructor may have his choice; but the author prefers the present order on the ground that the experimental attitude is the first essential of a student in psychology and there is no better field for experimental approach in elementary work than that of sensory experience.

2. *The eclectic point of view.* Many teachers of elementary psychology ride a hobby and have a narrow conception of the scope of psychology, thinking that it is all important that the student should get their point of view. The elementary students should have the privilege of acquainting themselves with different points of view and gradually learning to evaluate and appreciate what is good in each. The rabid extremists of different schools should be avoided in an elementary course.

3. *Applied psychology.* In the second half of the course four aspects of applied psychology are chosen for somewhat detailed treatment. Others might well be substituted in response to some local interest. One common advantage in these four projects is that the point of view presented in each of the required books is strictly psychological and that each project is in a very large sense a review of the theoretical psychology studied in the first semester. This gives us the cycle arrangement for review with the additional ad-

vantage that the review is necessary for an interesting application. Logically comparative psychology should have a project of its own, but in the interest of economy, it has seemed best to intersperse topics from this field in all the projects.

4. *Not psychology but to psychologize.* The elementary course should give the student some skill in and respect for scientific method in experimentation. It should enable him to think at first hand of the relationships of mental life in the direction of all its interrelations and should give him a beginning acquaintance with the sources of material, and the trend and attitudes of the leaders in the field.¹

¹ Now that psychology has assumed respectable proportions we must fight the prevailing "small college" view and the even now prevalent teachers college view that psychology is a subject which should be drilled into the student in the form of a predigested summary of certified facts. In pre-educational courses we must combat the idea that psychology should be studied only in so far as it furnishes principles for teaching; just as in physics, chemistry, and biology the first course should be primarily pure science and a general orientation course for the field as a whole. All applications of psychology should be built upon a substantial elementary course.

Project I. Sensory Experience: Vision

- I. HOW TO STUDY IN PSYCHOLOGY: (1) The project method; (2) Rules for effective study; (3) Serviceable memory.
Kornhauser, How to Study, pp. 15-24; Seashore, Introduction, Ch. VXII; this outline, pp. 1-8.
- II. GENERAL INTRODUCTION TO PSYCHOLOGY: (1) What is psychology? (2) Branches or divisions; (3) Methods; (4) Scope and purpose.
Seashore,* Ch. I; Woodworth, Ch. I; Gates, Ch. I.
**All written exercises called for in this text are to be performed scrupulously and handed in unless otherwise noted.*
- III. INTRODUCTION TO PROJECT I: (1) Principles involved in experiments; (2) Sensory experience, general outline.
Manual, Preface and Introduction; Seashore, Ch. II.
- IV. AFTER-IMAGES: (1) Negative; (2) Positive; (3) Adaptation.
Manual,* Ch. I; Woodworth, pp. 224-227; Titchener, A Text-book of Psychology, pp. 72-75.
**All reports of experiments in the Manual are to be handed in. Preserve the original record.*
- V. CONTRAST: (1) Brightness; (2) Color; (3) Applications of this law.
Manual, Ch. II. Trace subject by index in Luckiesh, Color and Its Applications.
- VI. STRUCTURE AND FUNCTION OF THE EYE: (1) Coats: sclera, choroid, retina; (2) Refractory media; (3) Muscles; (4) Theories of color vision.
Lickley, The Nervous System, pp. 89-101; Seashore, pp. 409-411.
Cf.* other texts.
**Cf. indicates references which may be gleaned to advantage.*
- VII. COLOR-MIXING: (1) Terminology: hue, chroma, tint, shade, brightness, saturation, primary, secondary, and complementary colors; (2) Laws of color mixing; (3) The color pyramid.
See these topics in Titchener, pp. 58 ff.; Seashore, pp. 21-26 (The laws on page 25 should be demonstrated with the color wheel.); Woodworth, Ch. X.
- VIII. GENERAL OUTLINE OF COLOR VISION:
Seashore, Ch. III (omit written exercises); Titchener, pp. 59-91; Manual, Ch. III (read only).
- IX. VISUAL SPACE: (1) Monocular; (2) Binocular.
Manual, Ch. IV; Seashore, pp. 40-46. Cf. Titchener, pp. 308 ff.
- X. VISUAL ILLUSIONS: (1) Terminal; (2) Small angles; (3) Zöllner; (4) Associational; (5) Perspective (apperception).
Manual, Ch.'s XII and XIV. Cf. Luckiesh, Visual Illusions.

OPTIONAL TOPICS

- I. APPLIED PSYCHOLOGY OF COLOR
Select and describe ten or more practical applications from Luckiesh, Color and Its Applications, and Light and Color.
- II. BLINDNESS
Substitutes for sight and hearing in the case of Helen Keller.
Helen Keller, The World I Live In.
Monographs:
Parsons, An Introduction to the Study of Color Vision
Troland, The Present Status of Visual Science

Project II. Sensory Experience: The senses other than vision

- I. **STRUCTURE AND FUNCTION OF THE EAR:** (1) External; (2) Middle; (3) Inner, with special reference to structure and function of the cochlea, bony canal, membranous canal, and organ of Corti. Lickley, pp. 102-112; Seashore, pp. 411-415. Cf. treatment in other textbooks.
- II. (1) **PITCH**; (2) **INTENSITY**.
Perform measurements with Seashore records, "The Sense of Pitch" and "The Sense of Intensity," following directions in Manual of Instructions and Interpretation. (To be performed before the class as a whole.) Cf. Seashore, Psychology of Musical Talent, Ch.'s II and III.
- III. (1) **TIME**; (2) **RHYTHM**.
Perform measurements with Seashore records, "The Sense of Time" and "The Sense of Rhythm," following directions in Manual of Instructions and Interpretation. (To be performed before the class as a whole.) Cf. Seashore, Psychology of Musical Talent, Ch.'s IV and V.
- IV. (1) **AUDITORY SPACE**; (2) **TONAL TIMBRE**.
Manual, Ch. V (This experiment should be performed outside of the classroom.); Seashore, Psychology of Musical Talent, Ch. VI.
- V. **HEARING:** General survey.
Seashore, Ch. V (omit experiments on page 70); Titchener, pp. 93-109. Cf. other texts.
- VI. (1) **TASTE**; (2) **SMELL**.
Seashore, Ch. VI; Titchener, pp. 114-139; Lickley, pp. 112-116.
- VII. **THE CUTANEOUS SENSATIONS:** (1) Pressure; (2) Temperature; (3) Pain.
Manual, Ch.'s VI (1 and 2 only) and VII; Seashore, pp. 84-94.
- VIII. **KINAESTHETIC AND STATIC SENSES:** (1) Strain, including illusions of weight and Weber's law; (2) Equilibrium.
Seashore, pp. 95-101; Manual, Ch. VII (Read only); Titchener, pp. 160-182.
- IX. **BEHAVIORISM:** (1) A behavioristic account of the senses.
Gates, Ch. II; Perrin & Klein, Psychology, pp. 19-39.
- X. **TRAITS OF PERCEPTION:** (1) Meaning; (2) Action; (3) Feeling; (4) Hallucinations and illusions; (5) Synesthesia; (6) Telepathy.
Seashore, Ch. VIII; Woodworth, Ch. XVII; Gates, Ch. XIII.

OPTIONAL TOPICS

- I. **LAW IN MENTAL LIFE**
Based on Seashore, Psychology in Daily Life, Ch.'s V and VI.
- II. **THE NATURE AND SIGNIFICANCE OF MUSICAL TALENT**
Seashore, Psychology of Musical Talent, Ch.'s I and XV.
Monographs:
Ogden, Hearing
Parker, Smell, Taste and Allied Senses

Project III. The Physical Basis of Mental Life

- I. THE NERVOUS ELEMENT AND ITS FUNCTION: (1) The neurone; (2) The nerve impulse; (3) The synapse.
- II. GENERAL PLAN IN THE STRUCTURE OF THE CENTRAL NERVOUS SYSTEM: (1) The spinal cord; (2) The brain stem; (3) The forebrain.
- III. FUNCTION OF THE BRAIN: (1) Localization of functions in the cortex; (2) Mind and body.
- IV. THE AUTONOMIC NERVOUS SYSTEM: (1) Structure; (2) Function.
In order to get a consecutive and unified picture, gather material on each of the above four topics, and study in turn the full assignment in each of the following authors: Lickley, Ch.'s II and IX; Perrin and Klein, pp. 63-71 and 147-150; Watson, Psychology, Ch. IV; Robinson & Robinson, Readings in General Psychology, pp. 39-46 and 59-61; Gates, Ch.'s III and IV; Woodworth, Ch.'s II and III; Seashore, Ch.'s XIII and XIV. Cf. other texts.
- V. REFLEX ACTION: (1) Experiments with the reflex frog; (2) The reflex arc; (3) Human reflexes; (4) The conditioned reflex. Seashore, Ch. XII; Cf. Perrin and Klein, pp. 92-122.
- VI. INSTINCT: (1) Characteristics of instinct; (2) Relation to reflexes; (3) Classifications of instincts. Seashore, Ch. XV; Woodworth, Ch. VI; Young, Source Book for Social Psychology, pp. 146-168.
- VII. URGES: (1) The dominant urges; (2) Their role in habit formation. Gates, Ch.'s VIII and IX; Woodworth, Ch. IV. Cf. Perrin and Klein, pp. 132-150.
- VIII. HABIT: (1) What the written exercises in the text show; (2) Account of James' treatment. Seashore, Ch. XVI; James, Briefer Course, Ch. X. Cf. Robinson & Robinson, pp. 102-131.
- IX. ASSOCIATION: (1) The laws of association stated from three different points of view; (2) What the experiments in association show. Manual, Ch. X; Seashore, Ch. XI (omit written exercises); Woodworth, Ch. XVI.
- X. NATIVE TRAITS:
Woodworth, Ch. V; Gates, Ch. V. Cf. Young, pp. 193-216.

OPTIONAL TOPICS

- I. THE ENDOCRINE GLANDS AND PERSONALITY
Berman, The glands regulating personality.¹
- II. PHRENOLOGY, A DEAD CROW
Look up subject in encyclopedia.
Monographs:
Troland, The Mystery of Mind
Ladd and Woodworth, Physiological Psychology

¹ Popular and speculative.

Project IV. The Higher Mental Processes

- I. **ATTENTION:** (1) The laws of attention; (2) The motor concomitants of attention.
Seashore, Ch. IX (for exercises on page 120 of this chapter substitute Manual, Ch. XIII); Woodworth, Ch. XI.
- II. **MENTAL IMAGES:** An account of your own (1) Method of rating your images; (2) Profile of imaginal type; (3) Recognition of imagery in your own memory and imagination (Deal only with first-hand experience).
Manual, Ch. IX; Seashore, Ch. X (except exercises on pp. 144 and 145).
- III. **IMAGINATION:** (1) Types of imagination; (2) Imagination in invention; (3) Play.
Seashore, Ch. XIX; Woodworth, Ch. XIX; Patrick, Psychology of Relaxation, Ch. II.
- IV. **IMMEDIATE MEMORY:** (1) Memory for geometrical forms; (2) Tonal memory.
Manual, Ch. XI; Measurement of "Tonal Memory" with phonograph record. Cf. Psychology of Musical Talent, Ch. XII.
- V. **GENERAL SURVEY OF MEMORY:**
Seashore, Ch. XVIII; Woodworth, Ch. XIV; Gates, Ch. 's XI and XII.
- VI. **THINKING:** (1) The concept; (2) Judgment; (3) Reasoning.
Seashore, Ch. XX; Gates, Ch. XIV; Woodworth, Ch. XVIII.
- VII. **AFFECTIVE TONE:** (1) Color preferences; (2) Consonance.
Manual, Ch. XV; Measure of "Sense of Consonance" with phonograph record; Ruckmick, The Mental Life, Ch. VII. Cf. Psychology of Musical Talent, Ch. VII.
- VIII. **EMOTION:** (1) The quality of feeling and emotion; (2) The classifications of emotion; (3) The bodily expression of emotion; (4) The James-Lange theory.
Seashore, Ch. XXI; Woodworth, Ch. VII; Gates, Ch. VII.
- IX. **ACTION:** (1) Types; (2) Reaction-time; (3) Will.
Seashore, Ch. XXII; Manual, Ch. XVI (Read only); Woodworth, Ch. XX. Cf. Titchener, pp. 428-468.
- X. **CONSCIOUSNESS:** (1) The stream of consciousness; (2) The self.
James, Briefer Course, Ch. 's XI and XII (omit pp. 196 ff.). Cf. Young, Ch. XV.

OPTIONAL TOPICS

- I. **IMAGINATION IN BUSINESS**
Deland, Imagination in Business.
- II. **IMAGINATION IN LITERATURE**
Slossen and Downey, Plots and Personalities
Monographs:
Pillsbury, Attention
Dewey, How We Think

Project V. Social Psychology

- I. INTRODUCTION AND REVIEW: (1) Introduction to social psychology as a science of individual behavior and consciousness; (2) Review of the physical basis of human behavior.
Allport, Ch.'s I and II.
- II. FUNDAMENTAL ACTIVITIES: (1) Instinct, maturation, and habit; (2) The prepotent reflexes and learning; (3) Social factors in the development of fundamental activities.
Allport, Ch.'s III and IV.
- III. PERSONALITY AND SOCIAL BEHAVIOR: (1) The social man; (2) Social behavior in animals.
Allport, Ch.'s V and VII.
- IV. LANGUAGE AND GESTURE: (1) The physical basis; (2) The genetic development; (3) Gesture and vocal expression in human development; (4) Social basis and value of language.
Allport, Ch. IX.
- V. FACIAL AND BODILY EXPRESSION: (1) Expression and emotion and allied states; (2) Theory of facial expression; (3) Expression through posture and physiognomy; (4) The stimulus value of facial and bodily expression.
Allport, Ch. IX.
- VI. RESPONSE TO SOCIAL STIMULI: (1) Elementary forms; (2) Group forms.
Allport, Ch.'s X and XI.
- VII. THE CROWD: (1) Prepotent individual reactions; (2) Release and heightening of individual reactions; (3) Attitudinal and imaginal factors; (4) Special mechanisms for the release of prepotent reactions.
Allport, Ch. XII. Cf. Young, Ch. XXII.
- VIII. SOCIAL CONSCIOUSNESS: (1) Social attitudes; (2) Leadership and prestige in social behavior.
Allport, Ch. XIII; Young, Ch. XX.
- IX. SOCIAL ADJUSTMENT: (1) Adjustments in anger; (2) Adjustments in family life; (3) Adjustments in personality traits; (4) Sociological aspects of conflict adjustments.
Allport, Ch. XIV; Young, Ch. XIII.
- X. SOCIAL BEHAVIOR IN RELATION TO SOCIETY: (1) Social aggregates; (2) The theory of society; (3) Social order; (4) Economic social behavior and control; (5) Social continuity and change; (6) Lines of future development.
Allport, Ch. XV.

OPTIONAL TOPICS

- I. PUBLIC OPINION
Young, Ch.'s XXV-XXVII.
- II. THE CAT
Gates, The Modern Cat: Her Mind and Manners
Monographs:
Dunlap, Social Psychology
MacDougall, Social Psychology

Project VI. Abnormal and Borderline Psychology

- I. DREAMS: (1) The frequency of dreams; (2) Characteristics of dream life; (3) The psychoanalytical theory of dreams.
Seashore, Ch. XXIII; Conklin, Ch. XV. Cf. Jastrow, *The Subconscious*, pp. 175-221.
- II. VARIETIES OF DREAM CONSCIOUSNESS: (1) In hypnogogic hallucinations; (2) In delirium; (3) Under the influence of drugs.
Jastrow, *The Subconscious*, pp. 222-265; Conklin, Ch. XVI.
- III. HYPNOSIS: (1) The antecedents of hypnosis; (2) Methods and degrees of hypnotizing; (3) The phenomena of hypnosis; (4) Suggestibility.
Conklin, Ch. XII; Jastrow, *Fact and Fable*, pp. 171-235.
- IV. SPIRITISM: (1) Psychological principles involved; (2) The physical phenomena: deception and fraud.
Conklin, Ch. XIII. Cf. Abbott, *Behind the Scenes with the Mediums*.
- V. DISTURBANCES OF COGNITIVE LIFE IN INSANITY: (1) Sensory aberrations; (2) Aberrations of memory; (3) Distortions of thinking.
Conklin, Ch.'s II, III and IV.
- VI. PSYCHOSES: (1) Dementia praecox; (2) Paresis; (3) Manic-depressive psychoses; (4) Epilepsy.
Conklin, Ch. V.
- VII. PSYCHONEUROSES: (1) Psychasthenia; (2) Neurasthenia; (3) Compulsion neuroses; (4) Anxiety neuroses.
Conklin, Ch.'s VI and VII.
- VIII. PSYCHOANALYSIS: (1) Discovering the complex; (2) Results of the analysis.
Conklin, Ch.'s X and XI.
- IX. A PSYCHOANALYTIC VIEW OF INSANITY
Hart, *The Psychology of Insanity* (for rapid reading).
- X. FEEBLEMINDEDNESS
Conklin, Ch. XVII. Cf. Goddard, *Feeble-mindedness, and Tredgold, Feeble-mindedness*.
(Examine carefully the tables of contents in these two volumes and look up any subjects in which you may be interested.)

OPTIONAL TOPICS

- I. THE KALLIKAK FAMILY
Goddard, *The Kallikak Family*
- II. MEDIUMSHIP
Abbot, *Behind the Scenes with Mediums*
Monographs:
LaRue, *Mental Hygiene*
Coriat, *Abnormal Psychology*

Project VII. Educational Psychology

- I. PROBLEMS AND SCOPE OF EDUCATIONAL PSYCHOLOGY: (1) What is education? Skinner, Gast and Skinner, Ch. I, Sec. 1-10; (2) The results of educational psychology, Sec. 11-17; (3) Mind in evolution, Sec. 27-29; (4) Analysis of a teacher's equipment, Sec. 42; (5) The development of personality, Sec. 43.
- II. CHILDHOOD AND ADOLESCENCE: (1) Theories of development, S. G. & S., Ch. XXI, Sec. 1-10, 24, 25; (2) The preschool child, Sec. 11, 12; (3) Adolescence, Sec. 16, 17.
- III. HEREDITY: A competition. Prepare and hand in a concise and logical brief on the subject, "Resolved that heredity is more of a factor than environment in making college students what they are." Choose either affirmative or negative. Not over 200 words.
- IV. EDUCATIONAL ASPECTS OF INTELLIGENCE: (1) Nature and measurement of intelligence, S. G. & S., Ch. V, Sec. 3-13; (2) The significance of mental levels, Sec. 17-27; (3) The inferior child, Sec. 30-39; (4) The superior child, Sec. 40-49.
- V. EDUCATIONAL ASPECTS OF EMOTIONS AND ATTITUDES: (1) Watson's experiments on infants, S. G. & S., Ch. VIII, Sec. 5, 6, 14; (2) Bodily expression in emotion, Sec. 11-13, 15-19; (3) The utilization of emotion in the educational process, Sec. 7-10, 23-25; (4) The development of control of emotions, Sec. 26-39.
- VI. EDUCATIONAL ASPECTS OF INSTINCTS: (1) Nature of instincts, S. G. & S., Ch. VII, Sec. 1-17; (2) Classification of instincts, Sec. 17-24; (3) Modification of instincts, Sec. 25-34; (4) Description of supposed instincts, Sec. 35-63.
- VII. MOTIVATION AND PLAY: (1) Attention, S. G. & S., Ch. XVI, Sec. 1-6; (2) Interest, Sec. 7-18; (3) Motives, Sec. 20-24; (4) Play, Ch. XVII, Sec. 1-18.
- VIII. TRAINING TO THINK: (1) Nature of thinking, S. G. & S., Ch. XV, Sec. 1, 2, 8; (2) Training to think, Ch. XV, Sec. 16, 20, 22; (3) The nature of apperception, Ch. XII, Sec. 1, 3-6, 11; (4) Training in apperception, Ch. XII, Sec. 18-19.
- IX. MEMORY TRAINING AND TRANSFER OF TRAINING: (1) Rules for memory training, S. G. & S., Ch. XIII, Sec. 8-25; (2) Theories of transfer of training, Ch. XIX, Sec. 1-10; (3) Abstract of study of transfer of training, Ch. XIX, Sec. 18.
- X. THE LEARNING PROCESS AND HOW TO STUDY: (1) What is learning? S. G. & S., Ch. IX, Sec. 1-2; (2) Laws of learning, Ch. XIX, Sec. 16-28; (3) Kornhauser's rules of effective study, Ch. XI, Sec. 2; (4) Whipple's rules of effective study, Ch. XI, Sec. 3. Cf. Gates, Ch. IX and X.

OPTIONAL TOPICS

- I. SELF-MEASUREMENT OF A TEACHER
Hyde, Self-measurement
- II. NEW MOVEMENTS IN EDUCATION BASED ON PSYCHOLOGY
Judge by impressions gained from reading S. G. & S.
Monographs:
Fox, Educational Psychology, Its Problems and Methods
Judd, Psychology of High School Subjects

Project VIII. Applied Psychology: Psychotechnology

- I. **PSYCHOLOGY IN VOCATIONAL ADJUSTMENT:** (1) Principles of vocational psychology; (2) The rôle of judgment in vocational adjustments; (3) Measurement of capacity.
Poffenberger, Ch.'s XIV, XV, XVI.
- II. **THE PSYCHOLOGY OF SELECTING MEN:** (1) The field and function of employment psychology; (2) Character reading.
Laird, *The Psychology of Selecting Men*, Ch.'s II and VII.
- III. **FACTORS IN VOCATIONAL ADJUSTMENT:** (1) Intelligence; (2) Special aptitudes and abilities; (3) Interest.
Kitson, *The Psychology of Vocational Adjustment*, Ch.'s VI, VII, VIII.
- IV. **SUBJECTIVE FACTORS THAT INFLUENCE WORK:** (1) Fatigue, rest and sleep; (2) Drugs and stimulants.
Poffenberger, Ch.'s IX and XIII.
- V. **ENVIRONMENTAL FACTORS THAT INFLUENCE WORK:** (1) Ventilation; (2) Illumination; (3) Distraction.
Poffenberger, Ch.'s X, XI, XII.
- VI. **PSYCHOLOGY IN LAW:** (1) The prevention of crime; (2) The detection of crime; (3) The treatment of the offender.
Poffenberger, Ch.'s XXIII, XXIV, XXV.
- VII. **PSYCHOLOGY IN MEDICINE:** (1) The prevention of disease; (2) The diagnosis of disease; (3) The treatment of disease.
Poffenberger, Ch.'s XXVI, XXVII, XXVIII.
- VIII. **PSYCHOLOGY IN INDUSTRY:** (1) Psychological factors in output; (2) Economy of effort; (3) Satisfaction as a product of work.
Poffenberger, Ch.'s XVIII, XIX, XX.
- IX. **PSYCHOLOGY IN BUSINESS:** (1) The nature of the consumer; (2) Adjustment of advertising and selling methods to the consumer.
Poffenberger, Ch.'s XXI, XXII. Cf. Starch, *Psychology of Advertising*.
- X. **PSYCHOLOGY IN MUSIC:** (1) The psychology of the musical mind; (2) The individual and training in the art.
Seashore, *Psychology of Musical Talent*, Ch.'s I and XV.

OPTIONAL TOPICS

- I. **FUNDAMENTAL PRINCIPLES IN APPLIED PSYCHOLOGY**
Based on a review of Griffiths, *Fundamentals of Vocational Psychology*.
- II. **PSYCHOLOGY OF ATHLETICS**
An effort at original construction based on knowledge of psychology in other fields.
Monographs:
Weld, *Psychology as Science*
Griffiths, *Fundamentals of Vocational Psychology*

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